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BULLETIN of the MENNINGER CLINIC

Vol. 7, No. 3. May, 1943

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PSYCHOLOGICAL TESTING NUMBER

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Topeka
Kansas

Issued bi-monthly by the Menninger Clinic, Topeka, Kansas
Annual subscription rate, $2.00. Single numbers, 50c.
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Bulletin of
THE MENNINGER CLINIC

VOLUME 7 | May, 1943 | NUMBER 3

EDITORIAL NOTE

The psychological research out of which the papers included in this issue of the Bulletin grew has been conducted for the past five years at the Menninger Clinic. For the past twelve months it has been sponsored and supported jointly by the Menninger and Macy Foundations.

The comparative studies showing the correlation of the psychological test results with the findings obtained in psychiatric interviews, described in the last paper, are an attempt to standardize an objective procedure which can be used with assurance by the physician. The kinds of tests used and the methods of compiling and correlating the material on many patients are described here; the results of the research are to be published upon its completion.

THE EDITORS.

CLINICAL PSYCHOLOGY IN THE PSYCHIATRIC CLINIC

BY KARL A. MENNINGER, M.D.

The basic theory upon which the work of this Clinic is predicated is the concept of "total personality," a concept which, we believe, characterizes American psychiatry generally. It simply means that the human being must be regarded as a physio-chemo-psychological unit capable of being studied, observed, interpreted and treated from a physical standpoint, from a chemical standpoint *and* from a psychological standpoint, conjointly. It implies that the physio-chemical approach to the human being, particularly the sick human being, is an incomplete one and that the medical schools which continue to shape their teaching along such 18th and 19th century lines will continue to deliver to the public physicians unequipped to treat effectively fifty per cent of the patients who come to them.

This concept assumes that psychology is a science—a body of knowledge, a technical discipline, a collection of established laws and unestablished hypotheses undergoing verification and the basis of a technique of examination which is just as important in the study of patients as are the techniques of urinalysis, cardiography and chemotherapy.

Most of the subscribers for this BULLETIN are physicians. Even the most psychiatrically minded of them are bound by tradition and practical

necessity to think more in terms of physics and chemistry than in terms of psychology. The psychological factors in disease which are being studied now, not only in the classical psychoses and neuroses but in the psychosomatic affections and in character disorders, are familiar to physicians for the most part only in their clinical forms. Blood in the urine of a patient with renal colic has a definite significance to the practicing physician. He may not be concerned very much with the technical devices for isolating occult blood or determining quantitatively the proportion of blood in the twenty-four hour specimen, but he recognizes full well the importance of such technical devices, and he wants to have a general knowledge of how they are done; he may even want to be *able* to do them himself.

The same thing is true of certain psychological techniques which have been developed by a few psychologists, in the clinical field, who have concurred in the total personality concept and who direct their studies and researches to supplying more definite and specific and quantitative examinational data. The physician may not be able to collect these data, but he should be able to use them.

It is to the exposition of some of these techniques as they are used in this Clinic that the present issue of the BULLETIN is dedicated. It is not to be expected that the average physician will find the material either immediately familiar or immediately useful to him. It will probably be less interesting to him in the ordinary sense of that word than less technical, more general discussions of the emotional factors in disease, as presented, for example, in the January issue. Scientific support of our clinical observations, however, must in the long run depend upon the controlled laboratory investigations of the psychologist (along with the physiologist and the chemist) and as physicians and psychiatrists we owe it to ourselves to try to understand what the psychologists have been able to discover and develop. It is no more our privilege or our responsibility to undertake this work than we would consider it the responsibility or the privilege of the psychologist to make a physical examination or for one of us as a practicing physician to undertake to make a Wassermann test. But all of these things go together in the full understanding of the patient, and it is no less important for us to understand psychological testing than it is for us to understand the Wassermann test. Such a general understanding will then enable us to make a more appropriate and a more extensive use of what the psychologist has to offer us, just as we now make more intelligent and more extensive use of complement fixation tests.

A good many physicians, including even a good many psychiatrists, still conceive of the clinical psychologist as a psychometrician. The remarks I have just made in comparing psychological tests to the Wassermann test

might even seem to favor this relegation of the psychologist to the status of a laboratory technician and in that sense my illustration is a faulty one. The clinical psychologist has gone far beyond the time when his chief function was to express intelligence in Arabic numerals. One might almost say that determining the intelligence quotient is now the least important thing which the psychologist does; that is certainly true at this Clinic. I do not know how to give the proper emphasis to what I have just said, but day after day we get reports from social agencies, educational institutions, etc. in which the IQ of a patient is given as the chief result of the psychological investigation of that person. Such information is of very little use and the emphasis placed on it is so antiquated as to make us sometimes feel that it might be better if intelligence tests had never been invented; the slavish use of them has indeed done much to blind us to the real possibilities of psychological testing.

Some physicians labor under a prejudice against the clinical psychologist because of the assumption that he is a would-be therapist. There are, to be sure, a few psychologists who undertake therapy, in spite of their lack of preparation for it and legal prohibitions against it. A psychologist inspired by the opportunities which he sees for psychotherapy and distressed by the lack of its use by practicing physicians of his acquaintance may sometimes be driven in his zeal to undertake things which he should not undertake. In doing so he is driven by the lack of academic preparation in the new advances of clinical psychology, as well as by the reluctance of physicians and psychiatrists to give him a respectable position in a coordinated division of labor. This is a reproach to us physicians which we should heed, even though it is a reproach of a type which hurts the cause. Certainly we should not let the blunders of a few zealots blind us to the real gifts which clinical psychology has to offer. The reproach to us physicians is a reproach on two scores: first, that so many of us ignore the psychological factor in disease; and, secondly, that so many of us try to relegate the psychologist to the status of a laboratory technician.

In our Clinic the Psychology Department has a highly responsible position. Every patient, adult or child, in-patient or out-patient, short-time or long-time patient, is referred to the Psychology Department for a battery of tests. Every prospective employee of the Clinic, the Hospital, the School and the Foundation is subjected to psychological tests as well as to the routine interviews with a member of the business department and the head of the department in which he is to be employed. We would no more think of omitting the contribution of the psychological investigations to the study of a patient than we would of omitting the physical examination. Errors are made to be sure—in both departments—but

information upon which some prediction is possible can likewise be obtained in many instances from both departments. We do not want to employ a man with an incipient tuberculosis, nor with a paranoid trend, nor with a positive Wassermann. None of these things is apparent from superficial observation and ordinary conferences, and sometimes none of them can be discovered even by the most skillful physician. The tuberculosis shows up in the physical examination or the X-ray examination, the syphilis shows up in the Wassermann test, the paranoid trend shows up in the psychological tests. As a matter of fact, sometimes the physical pathology also appears in the psychological tests, incredible as this may sound to those unfamiliar with the extent to which these investigations may really penetrate.

The tests used in our Psychology Department have been listed, reported, and described in previous numbers of the BULLETIN. To recapitulate, we use six types: (1) intelligence tests of various sorts; (2) tests of concept formation—these tests determine the basis of intellectual functioning; (3) projective tests which give a skeleton outline of the personality and of the emotional patterns; (4) content tests which reveal ideational content; (5) aptitude tests for the testing of special abilities; (6) achievement tests for the testing of progress, particularly in learning. The latter two types are used chiefly with children and are less valuable clinically than the first four which may be considered the routine tests.

The present BULLETIN contains articles describing some of the results in those tests *not previously reported or described in the Bulletin.* For discussion of the Rorschach and Szondi tests, and for the description of other tests used, see the following earlier articles:

RAPAPORT D.: The Szondi Test. *Bull. Menninger Clinic,* 5:33–39, 1941.

VARVEL, W. A.: The Rorschach Test in Psychotic and Neurotic Depressions. *Bull. Menninger Clinic,* 5:5–12, 1941.

BROWN, J. F., AND RAPAPORT, D.: The Role of the Psychologist in the Psychiatric Clinic. *Bull. Menninger Clinic,* 5:75–84, 1941.

BROWN, J. F.: Reactions of Psychiatric Patients in a Frustrating Situation. *Bull. Menninger Clinic,* 3:44–64, 1939.

LEWIN, K.: Psychoanalysis and Topological Psychology. *Bull. Menninger Clinic,* 1:202–211, 1937.

VARVEL, W. A.: Suggestions Toward the Experimental Validation of the Rorschach Test, *Bull. Menninger Clinic,* 1:220–225, 1937.

REICHENBERG, W.: The Bühler Test as an Index of Environmental Influence on Child Development. *Bull. Menninger Clinic,* 1:70–77, 1937.

THE CLINICAL SIGNIFICANCE OF THE SCATTER ON THE BELLEVUE SCALE[1]

By SUZANNE REICHARD and ROY SCHAFER

The days in which it was presumed that a child was born with an I.Q., carried it through his life, and died with it, are gone. The Iowa studies and others have shattered the myth of the unchangeability of I.Q. Attention has shifted away from total I.Q. to analysis of the various psychological functions tapped by the intelligence test and to the scatter, or deviation from each other, of the scores which the patient obtains on different subtests. Although emphasis on scatter is not new, but few systematic attempts at exploring the clinical significance of scatter have yet been made.[2]

In our clinical work, we use the scatter or configuration of test scores to understand better the makeup of an I.Q.—whether the makeup of a patient's I.Q. is an expression of a temporary inefficiency of a well-endowed person or of an empty, shell-like remainder from a once good intellect undermined by a psychotic maladjustment, etc. The scatter frequently gives us the clue to the understanding of the case by supporting or supplementing the findings on the other tests. In the following, we shall give some general ideas of scatter analysis. It should be kept in mind, however, that scatter analysis is really maximally useful and still safe only when it is used in conjunction with other tests.

Before scatter can be properly analyzed, one must clarify in his thinking the nature of the psychological functions involved in the subtests, as well as the kind of influences which may interfere with good performance. In our work in the Department of Psychology at the Menninger Clinic, the Wechsler-Bellevue Intelligence Scale (1) is administered to every admitted patient. This test lends itself especially well to the proposed type of analysis because in it the test items are divided into eleven homogeneous groups of items.

We take the weighted scores of these eleven item groups and the average of the five purely verbal, the average of the five performance, and the average of all the scores except the vocabulary, and chart them in the form of a graph or Scattergram (see page 94). The content of the eleven subtests and our present understanding of the psychological functions involved in each will be outlined briefly below.

[1] The work on the Scatter in the Bellevue Scale has been conducted for the last three years in the Department of Psychology of the Menninger Clinic under the direction of David Rapaport, Ph.D.

[2] An introductory study of the clinical significance of scatter was reported by Brown, Rapaport, Dubin and Tillman (2). See bibliography. Subsequently, Wechsler presented some observations on Scatter (1).

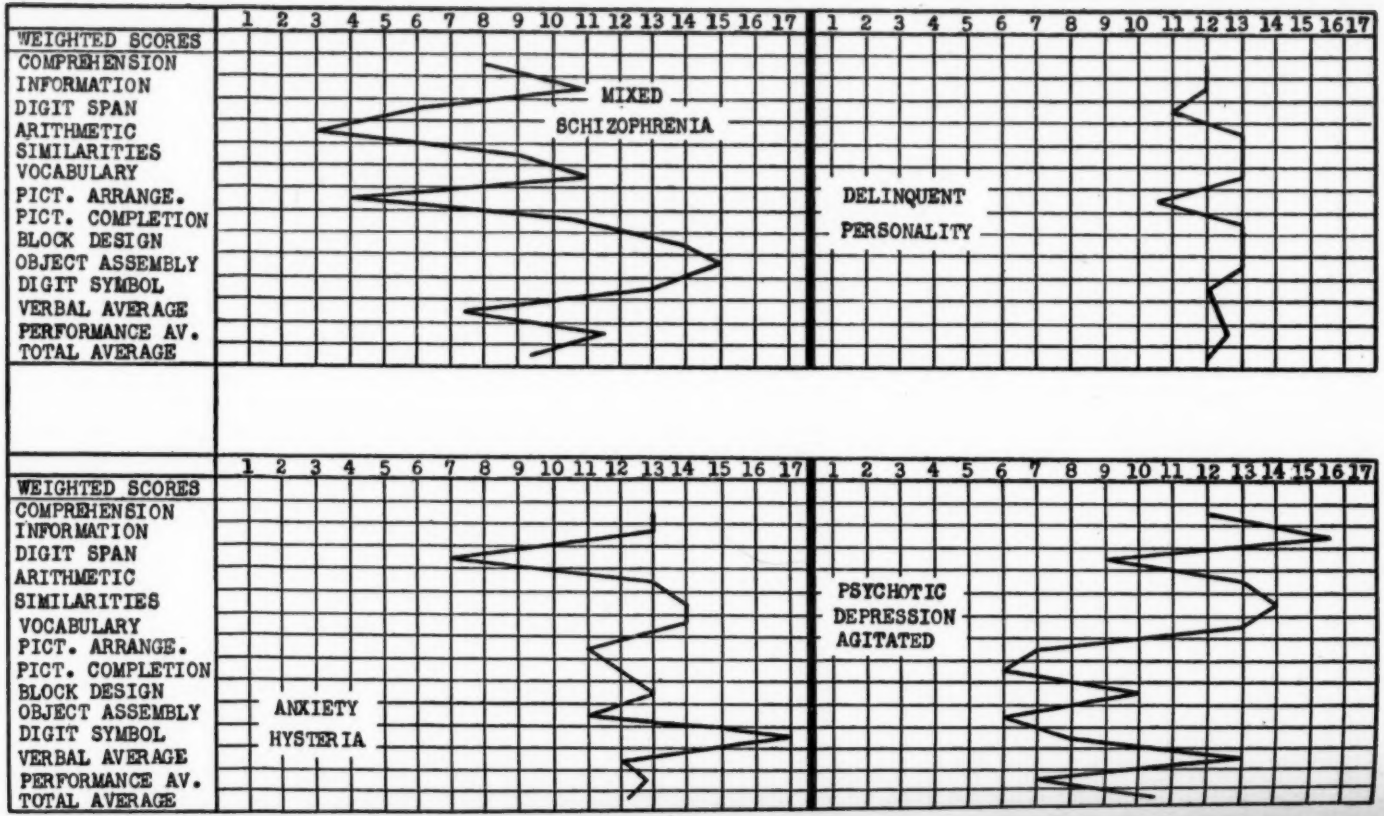

FIG. 1. FOUR SELECTED SCATTERGRAMS

The first test, the *information test*, requires knowledge which one picks up in everyday life as well as in school and in pursuing cultural interests. The total information score and inspection of single items will reveal something of the subject's endowment, educational and cultural opportunities, and interests.

The *comprehension test* is a measure of the subject's soundness of judgment; that is, of his ability to make use of his intellectual assets in a manner not only logically correct but emotionally relevant. If we consider Wechsler's finding that information and comprehension are highly correlated, a comprehension score much lower than the information score would generally indicate an impairment of judgment.

Intimately related to the function of judgment is planning ability as measured by the *picture arrangement test*. Here a set of pictures have to be placed in a certain order so that they tell a sensible story. Correct anticipation and attitude are essential for correct performance here inasmuch as they provide for the proper selection of a relevant and appropriate sequence of ideas.

The *digit span test* is considered to be a measure of efficacy of attention, of a degree of freedom of receptivity. Where the subject's affects and anxieties are intense, they may disturb "the smooth surface of consciousness" which must be turned toward the outside world in order for the subject to be freely receptive. It is not the memory function we are testing here, since we are not dealing with logically meaningful and emotionally relevant material at all.[3] Besides, many subjects with disorganized memory functioning do quite well on the digit span test.

The *arithmetic test* and the *picture completion test* (in which a missing part in each of a series of pictures is to be pointed out) both involve voluntary concentration. Concentration is a more active process than attention since it involves a focusing of consciousness upon the current topic and exclusion of other emotional or thought contents. These two tests require a utilization of knowledge and a facility of relationship appraisal which may be reasonably expected of the average American adult. Nevertheless, concentration is the essential factor, because the subject must summon up appropriate knowledge for each problem in a limited time.

A comparison of the digit span, arithmetic and picture completion scores is often revealing. If, for instance, digit span is low and the other two are high, there is reason to assume that the subject has an attention disturbance and is able to maintain a satisfactory contact with his environment only by an effort of voluntary concentration. This pattern is characteristic of many neurotic anxiety states, especially those of compulsive make-up.

[3] See, in this respect, Rapaport: Emotions and Memory (3).

FIG. 1. FOUR SELECTED SCATTERGRAMS

The *similarities test*, where the subject has to describe in what way various pairs of named objects are alike, gives a measure of verbal concept formation. It has a high correlation with information and comprehension and can therefore be used to estimate their impairment. It generally stands up in maladjustment much better than comprehension, especially in certain kinds of schizophrenia, but will go down in very deteriorated cases.

The *block design test*, where drawn designs have to be duplicated with blocks, and the *object assembly test*, a jig-saw type of test, both tap the ability to analyze into its parts a given pattern in order to be able to reconstruct it from its parts. Anticipation of a visual-spatial configuration of parts allowing for an organization of these parts into a whole, and the ability to be guided by visual impression in motor action of the hand in reproducing a pattern, are both required for good performance. Such abilities are impaired by organic lesions, long-standing drug addiction, acute toxic states and depression. It is important to note that emotional disturbances can thus invade the functioning of the visual-motor field.

Also closely related to these two tests is the *digit-symbol* test in which according to a given sample, numbered empty squares have to be filled by symbols corresponding to the numbers. It, too, is subject to the same retarding influences as block design and object assembly.

The last test is the *vocabulary test*. Since vocabulary has been found to stand up best of all test items wherever a deteriorative process is present, such as senility or psychotic disorganization, the vocabulary score is helpful in estimating the original endowment of the subject and thereby detecting impairments in other functions.

Before going on to the discussion of four different samples of scatter, it should be mentioned that not only by comparisons between different test scores do we gain evidence of the nature of the subject's difficulties, but also by a careful inspection of all items, especially those which are failed. The kind of performance required for each item and the kind of failure (absurdity, temporary inefficiency, incoherence, ignorance, etc.) must all be kept in mind. It is not infrequent that a schizophrenic will give a single response so bizarre as to be pathognomonic in itself.

With these general ideas in mind we can now consider the scattergrams presented in the table (see page 94). The first scattergram is that of a mixed schizophrenia with paranoid trends. Here we find the characteristically extreme scatter of schizophrenics covering, in this case, 12 points. Impairment of judgment is indicated by the comprehension score being much lower than information. Low scores on digit span and arithmetic indicate impairment of attention and concentration reflecting the intense anxieties present. The relatively low score on picture arrangement indi-

cates impairment of the planning ability and of the ability to anticipate and grasp social situations, so characteristic of many schizophrenics. A comparison of this low score with the low comprehension score supports further the inference concerning impaired judgment. Deterioration is not yet present in this case since visual organization as measured by block design and object assembly are excellently retained.

The second scattergram is that of a delinquent young man. There is almost no scatter, all scores lying between 11 and 13. Such a narrow scatter is found to be quite frequent in delinquents. The rationale for this is not clear, however. On the other hand, the more clearcut the neurotic factor in the delinquency, the more the scattergram deviates from the one here presented.

The third scattergram is that of a case of anxiety hysteria. The significant feature of this scattergram is the relatively low digit span score, which indicates a rather well preserved person troubled with strong anxieties which impair attention. Thus a significant feature of the psychiatric picture can be inferred from a comparison of the digit span score with the total score level. The scatter is neither extremely wide nor extremely narrow. This is true not only for this single case. In a statistical comparison of extent of scatter for psychotics, neurotics and character disorders, it was found that neurotics show the least amount of scatter while psychotics show the greatest (2). The critical ratio for the difference in verbal test scatter between neurotics and psychotics was 3.50 and the critical ratio for performance test score scatter was 2.90.[4]

The fourth scattergram is that of a case presenting an agitated depression of psychotic degree. The performance score level is characteristically lower than the verbal score level. The low score on digit span, indicating strong anxieties, is to be expected in an agitated depression. Depressive cases generally show a great retardation in visual-motor efficiency. In a statistical study comparing depressives with a mixed group of psychotics and with a mixed group of neurotics it was found that the difference between verbal and performance level was so much greater for the depressive group than for either of the others that such a difference could be expected less than five times in one hundred on the basis of chance alone (critical ratio = 2.1 and 2.4, respectively) (2).

We see, then, how an analysis of the functions involved in an intelligence test and a careful inspection of the scatter can be of aid in understanding the clinical picture. The total width of scatter, where it is extreme, is generally indicative of psychotic disorganization; where it is extremely

[4] In both cases there is less than one chance in a hundred that such differences could be obtained by chance alone.

narrow, it may indicate normalcy or delinquent personality. Where the performance level is much lower than the verbal level, we may assume the presence of depressive trends in the patient. A significantly lower digit span and/or arithmetic score indicates anxieties interfering with attention and voluntary concentration. Especially important is the comparison of various pairs of scores, such as information and comprehension scores, picture arrangement and comprehension scores, picture completion and arithmetic scores, etc. Some of these pairs have been mentioned above in the section discussing the case of mixed schizophrenia.

We should like to stress that although the conclusions presented here are drawn from extensive clinical experience, they are in need of thorough statistical validation. Such work is now in progress in our department.

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3. Rapaport, D. *Emotions and Memory*. Baltimore, Williams & Wilkins Co., 1942, pp. 282.

THE ROLE OF TESTING CONCEPT FORMATION IN CLINICAL PSYCHOLOGICAL WORK

By SUZANNE REICHARD and DAVID RAPAPORT

I

Concept formation is that function which people perform every time they decide that a thing is to be called by this or that name; every time they decide that a thing "belongs" to this or that group of things, or that two or three things "belong together." In other words, concept formation is the seeing of the common essential factor in a variety of things. The concept "table" refers to a wide realm of objects; to all the existing and imaginable tables. We say that all the tables are in the realm of the concept "table." The content of this concept, however, is the hardly definable common factor of these tables; an abstraction which is independent of the form of the tables (round, square, horseshoe, etc.), of their color (brown, white, red, blue, etc.), of their material (wood, iron, marble, etc.), of the number of their legs (one, two, three, etc.).

The most common task of concept formation which we perform in everyday life is calling a thing by its name. Frequently, however, we are given a group of objects, or group of events, and we have to infer from this realm the proper concept under which they all can be subsumed. This is a task of *induction*. At other times, we are given a concept and we must find the objects which belong to it, which are its realm; this is a task of *deduction*. In general, however, the organization of a number of new facts or elements of a new situation involves concept formation, which in turn implies both induction and deduction. In fact, the elements out of which our thinking is built are rarely pure induction or deduction, but rather concept formation, in which both induction and deduction are involved. One might put it this way: we cannot function efficiently if we take only the facts that are before us without trying to organize them in terms of concepts which we have from earlier experience; neither can we force the concepts of our earlier experiences, unchanged, upon new facts and situations. Efficient functioning comes about through a steady approximation of previously built concepts and newly given facts; and by steady alternation of deductions from our old concepts with inductions from the always-new data which life presents. It is for this very reason that encroachment of emotional maladjustment upon intellectual function usually shows up very early in disturbances of concept formation.

II

In view of all this, it is regrettable that until recently investigations were concerned with the *logic* of human thinking—in other words, with induction and deduction—instead of with the *psychology* of human thinking. Recently, however, Piaget's (8) work opened up a broad road for investigating concepts of children. His pioneering work attracted much interest to the problem of concept formation. The work on concepts of animals (15) and pre-literate people (9), and related investigations on equivalent stimuli (7), carried this aspect of the investigation of the psychology of thinking a greater step forward than had been made for several hundred years. In the view of the present authors there appears to be, except for the problem of the dynamic functioning of memory, no aspect more basic to the understanding of human thinking than is concept formation.

In order to preface the clinical problems, methods, and applications of concept formation testing, a few preliminary remarks concerning concepts will be in place. It will be obvious that the very use of nouns is a conventionalized conceptual device; it is the best routinized conceptual function we perform; and it often is retained, due to its conventionalized character, even when active concept formation is seriously impaired. A less conventionalized but still quite routine conceptual performance is the apperception of the "belonging together" of objects familiar to us from our previous experience. Here we must distinguish between the performance in which we *recognize* the conceptual "belonging together" of a number of facts or objects, and that in which we *actively* group and organize well-known objects in terms of our own concepts. A third general level of concepts also must be distinguished; namely, that in which the material with which we deal is not altogether familiar to us, and in which we have to utilize our concepts in order to reorganize conceptually a relatively or absolutely new set of facts, events, or objects.

Besides these verbal, routinized, and creative types of concept formation, we also must consider the developmental aspect of concept formation. Many investigators have found that one can distinguish crudely between three levels of development of concept formation. The first is that called concretistic, in which things are considered as belonging together because of non-essential, concrete features possessed by them (e.g., an orange and a banana are similar because both have peels); the second usually is designated as functional, and refers to the belonging together of objects which have a common use or function (e.g., an orange and a banana are similar because one eats them both); the third is that abstract conceptual level on which two things are considered as belonging together because they are associated in a well-known and defined abstract category (e.g., an orange and a banana are similar because both are fruits). Our clinical experience

supports the findings of the existence of such levels, and also of their above-described progressive sequence. However, we were not satisfied by the clinical experience showing that in far-reaching maladjustments functional and concretistic definitions crop up in concept formation tests, and we undertook a developmental study (10), the results of which demonstrate directly that in our material from children and adolescents (4–14 years), the concretistic definitions decreased with age to give place to an increase in the number of functional descriptions; and that these again decreased, later on, to give place to conceptual definitions.

III

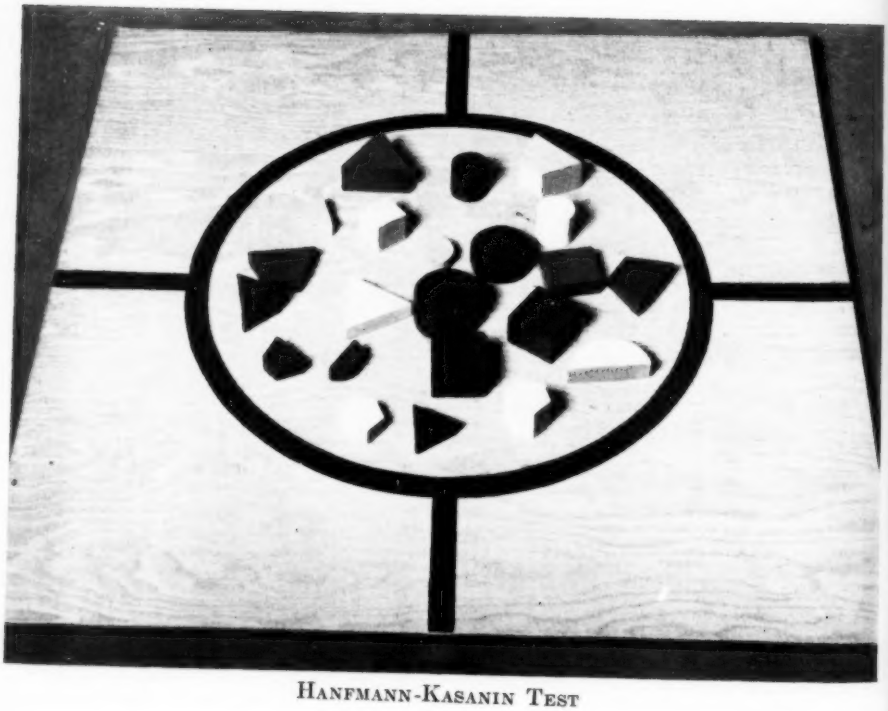
In our clinical work with adults, we use three different tests of concept formation; with children we use two other concept formation tests. The tests used with adults are the Similarities Test of the Wechsler-Bellevue Intelligence Scale (13); the Sorting Test first described by Weigl (14) and later by Goldstein and Scheerer (3), and the Ach-Sacharov-Vigotsky Test (1, 12), which was further developed by Hanfmann and Kasanin (5, 6). The tests used with children are the Color Form Test first described by Weigl (14) and later by Goldstein and Scheerer (3), and the Similarities and Differences and other conceptual items of the Stanford-Binet Scale.

The use of the Similarities Test is old; only the viewing of it as a concept formation test and the use of it in connection with other concept formation tests is specific to our work. In the standardization of this test by Wechsler, the norms for the scores 0, 1, and 2 given according to the degree of adequacy of the response to questions such as "In what way are an orange and banana similar or the same?", etc.,[1] parallel the concretistic, functional, and conceptual distinctions amazingly well. Here we cannot go into all the details we learned concerning this Similarities Test. We should like to state only that the relationship of the subject's performance on the Similarities Test to that on the Hanfmann-Kasanin Test using less conventionalized materials is significant. The items of the Similarities Test can be passed purely on the basis of the habituated verbal association, orange—banana—fruit, although the active concept formation of the patient may be deeply impaired. The relationship between these tests usually is that when similarities are impaired, other levels of concept formation are impaired also; and the maladjustment is usually considerable, in all probability of a psychotic degree.

The Sorting Test consists of thirty-three objects. In the first part of the test, the subject is handed seven objects, one at a time, and told to

[1] orange—banana; coat—dress; dog—lion; wagon—bicycle; daily newspaper—radio; air—water; wood—alcohol; eye—ear; egg—seed; poem—statue; praise—punishment; fly—tree.

SORTING TEST



HANFMANN-KASANIN TEST

put with each "all that belong with it." After he has completed his grouping, he is asked to tell why they belong together. The second part of the test consists of the presentation by the examiner of twelve groupings which the subject is asked to define. These groupings are based on use, color, form, material, or the existence of pairs. This test has been used in cases of brain injury which usually show deep-rooted disturbance of concept formation (3), and in some psychotic groups, especially for predicting the outcome of shock treatment (16). Only one preliminary exploratory study among children (11) had been published before our own developmental study (10). The fact that this test is able to reflect impairments of concept formation due to neurotic and psychotic maladjustments has only been touched upon thus far (2). In our clinical work, we found the test useful in these respects. However, we had to develop a scoring sensitive enough to reflect fine qualitative features of the test performance. We devised a scoring in which the sorting behavior of the subject is scored separately as to its adequacy (+, ±, ∓, −) and as to its narrowness or looseness; in other words, as to the criterion whether or not the subject includes all the objects which he could subsume adequately under his sorting principle, or includes more than he could so subsume. We score separately the verbalization of the sorting principle. Here we distinguish conceptual definition from functional description, and again make distinctions between the different kinds of concretistic definitions. We also score the adequacy of the verbalization in relation to the sorting behavior. Here again we cannot go into all the details we have learned concerning this test. We have found that loosening of the concept basis, the inclusion of more objects than the sorting principle applied would allow for, is a schizoid performance (e.g., a subject groups with a ball any object which has the tiniest rounded part, such as a knife with a rounded tip). Narrowing of the concept basis is a depressive performance, though it also occurs to varying degrees with over-cautious, anxious subjects. The increase of functional descriptions as against conceptual definitions, and the occurrence of concretistic and fabulated inadequate verbalizations, permit some inference as to the degree of maladjustment present.

The third test which we use is the Hanfmann-Kasanin Test. This test has been used mostly on schizophrenics, and to the present authors' knowledge, a study on college students (4) has been the only one on subjects other than schizophrenics. This test consists of twenty-two little blocks, of six different shapes, painted in five different colors, of two different heights, and of two different general widths. The task with which the subject is confronted is to find out how these blocks can be divided into four consistent kinds. Each kind is indicated on the bottom of the block by a number which is hidden from the subject; and when the subject makes an

erroneous solution he is shown the number on one of these blocks as a clue. Several groupings as to form, several as to color, division of the blocks by putting one of each form or one of each color into each group, or any combination of these, are the most frequent errors and inconsistent groupings. Groupings according to width or height yield only two kinds, which may be subdivided again in terms of any of the earlier described erroneous and inconsistent groupings. The real solution is based on the very obvious combination of height and width, dividing the blocks into a high and a low group, each of which is divided in turn into two groups of wide and narrow surface areas respectively.

Again the conclusions of our clinical experience can be stated here only briefly. Psychotic subjects are prone to behave as if they understood the test instructions, while their performance reveals that they really misunderstood them. They are prone to lose awareness of the aim of the test. Patients in whose maladjustment anxiety plays a paramount role usually are prone to distribute one of each form and/or one of each color in a group, a performance which is hard to correct by clues, because any clue given means only that the block shown will be interchanged with a block of similar color and/or similar form in another group. Compulsive characters will be prone to see the height and width principles in a few minutes. They will, however, discover that each of these lends only a bi-grouping instead of a full grouping, and will proceed with the certainty of the discovery that those two possibilities are out.

The first of these performances is a sample of an all-too-fluid grouping, the second of an all-too-rigid one. The examiner's task is to set up enough barriers, by means of clues, to halt the loosening performance and to break down, with help of clues, the rigidity of the rigid performance. The number of clues and time needed for enabling the subject to solve the test problem will give a measure of the relative ability of the subject to cope with a new conceptual problem. This test, then, in the sequence of performance of the subject, shows us the subject's personality in action when confronted with relatively new material which is to be organized.

IV

In our clinical work we have found these tests to be of great help in understanding the mode of thinking of the patient. Very often they prove helpful in supporting and supplementing the other tests when it is difficult to make a differential diagnosis. The Sorting Test is especially helpful in preschizophrenic cases and in schizophrenias which are poor in symptoms and where, consequently, the other tests are not conclusive. The Hanfmann-Kasanin Test is of greatest value in cases in which it is relatively well solved when the rest of the tests are badly impaired, and where it

thus indicates that the depression or anxiety-state is of a neurotic rather than a psychotic character.

Besides this practical use, the tests have opened a new avenue of understanding of human thinking, an avenue which is relatively independent of the content of the thinking and thus is more accessible experimentally.

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THE CLINICAL APPLICATION OF THE THEMATIC APPERCEPTION TEST

By DAVID RAPAPORT

Psychological tests have been and are being used to appraise the general intelligence and specific abilities of people. However, it is only recently that tests have been developed to appraise their interests, traits, and even general personality characteristics. All these tests, however, fail to give us a sample of the thought content of the persons tested. Though we may learn from the tests what the I.Q. of a person is, whether he is mechanically or theoretically minded, etc., whether he is a well or poorly adjusted person, whether his interest patterns indicate that he might make a good physician rather than a good salesman, we learn but little about his predominant or latent thoughts. In our work in the Department of Psychology of the Menninger Clinic, we have used the Thematic Apperception Test for obtaining a sample of the thought content.

Before entering the discussion of this test and its interpretation, it will be worthwhile to consider why one might want to obtain a sample of the thought content of any subject. When the psychiatrist asks his patient to give him his history, he does not get the thought contents of the subject, but rather a select series of memories in which he obtains only sporadically some traces of the subject's actual ideas and preoccupations. More generally, the patient's thought contents will be inferred from the history which the patient gives. When the psychiatrist attempts to elicit from the subject his attitudes toward the figures of his environment, his aspirations and his view of his work and recreations, as well as his attitude toward his illness, he is essentially attempting to obtain a sample of thought contents. If sufficient time is at his disposal, in all probability he will achieve his aim. Clinical psychology aims at developing techniques by which, in a controlled situation, without the patient's knowing what is being sought, material can be obtained which parallels the clinical material collected by the psychiatrist. By doing so, clinical psychology attempts to provide the psychiatrist with information which, because of lack of time, he may not be in a position to obtain, and/or to provide a comparable independent assessment of material about the patient which gives added security in the appraisal of the patient's situation.

The Thematic Apperception Test was first described by Morgan and Murray in 1935 (9). The basic idea of the test was used by Schwartz (13) and by Amen (1). Explorations concerning the potentialities of the test have been reported by Masserman and Balken (2, 3, 4), Vander Veer

and Balken (5), Murray (10), Rotter (12), Harrison (7, 8), and Bennett (6). The test consists of three series, each containing ten photographs each of which represents an independent situation. One of these series is presented to men and women alike, one to men, and one to women only.[1] In our practice the following instructions are given to the subject: "I am going to show you some pictures. I want you to make up a story around each one of them. I want you to describe the situation shown in the picture, the events that lead up to it, and to tell me what the outcome will be. Describe the feelings and thoughts of the characters. Use your imagination. What we should like to have is a plot, and not an elaborate literary story."

When this test is used without other tests having been given simultaneously, it may give us much information extraneous to its main purpose. Thus, for instance, the careful examiner will easily assess the wealth of live vocabulary of the subject; the accuracy, ease, and elegance of language usage, the wealth of ideas and freedom of imagination, as well as many other characteristics of the stories which will allow us to make inferences as to the intelligence and creativeness of the person tested. Sometimes the coherence of the stories, or the lack of it, and the degree of organization or looseness of the stories, will allow direct inferences as to the degree of maladjustment present. It is, however, much safer to use these indicators merely as additional information to that obtained in the intelligence and personality tests, and to use the test for the main purpose described above. In the elucidation of the predominant thought contents of the subject, the clinical interpretor has two main directives: 1) the formal characteristics of the stories; 2) the content of the stories. We shall discuss each of these.

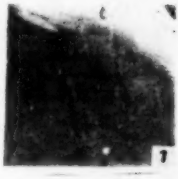
1. FORMAL CHARACTERISTICS

The most helpful of the formal characteristics of the stories is the degree to which the subject complies with the instructions given him. Has he been really able to make up a story, or has he given merely a description of the picture? Has he given his story in the form of a plot, in which antecedents, situation, outcome, as well as the feelings and thoughts of the characters are indicated, or has he had to elaborate it into a circumstantial story? These are the first questions which the examiner will want to ask himself.

Nearly as helpful as the consideration of the compliance with the instructions is the consideration of the degree of adherence which the subject

[1] We use the second edition (not the original Morgan-Murray version) of the pictures distributed by the Harvard Psychological Clinic. We have not worked, as yet, with the most recent (third) edition.

SERIES FOR MEN AND WOMEN



...ERCEPTION TEST

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SERIES FOR MEN

shows to the implications of the pictures presented. The first question here is whether or not the subject has perceived and apperceived the picture adequately in all its parts. These two formal aspects of the stories lead us to a third most helpful basis for interpretation, which we shall refer to as *inter-* and *intra*-individual consistency. If a subject who usually describes the events antecedent to the situation shown in the picture suddenly avoids doing so in one picture, the examiner will have to pay special attention to that specific story. He may find that the content of this story gives a clue to explain the omission if it is assumed that the idea omitted is one which the subject is unable or reluctant to bring into his consciousness, or at least to verbalize. Such deviations in compliance occurring in a subject who otherwise adheres to the instructions, introduce into his stories an inconsistency which can easily be discovered by comparison of his stories, one with another. These deviations are labeled *intra-individual consistency*. An example of such a deviation is the following: a subject who had given the antecedent events in nearly all of his stories, avoided doing so in his story given to the picture in which a man in a dark room is silhouetted against a light window. His story was that the man was standing in the window pondering about his loneliness on a moonlit night; he was sleepless; he had been standing there all night and did not know what to do. The inference made by the examiner was that this omission of antecedents was significant and that, inasmuch as stories suggested by this picture are frequently suicidal stories, it was assumed that the omitted antecedents were suicidal ideas. This conclusion was supported by the clinical history.

The evaluation of the degree of adherence to the picture context is not as simple as the evaluation of compliance with the instructions. It can be done only by comparing the story of the subject with the stories given by other persons, i.e., by evaluation of *inter-individual consistency*. If, for instance, a prostrate figure whose face is not shown in the picture is seen by men usually as a man, and a certain male subject sees the figure as a woman, his perception of the picture deviates from the perceptions of others, and thus must be considered as significant. In such cases, especially if such misrecognitions occur repeatedly, there is sufficient basis for assuming that the subject has a female identification. Our comparison of such inferences with clinical material has demonstrated the validity of these inferences. The attention paid to *inter-individual consistency* of the stories given for each picture resulted in the recognition of the (for the most part) very obvious fact that certain pictures are prone to elicit the attitude of the subject toward certain types of problems. The picture of the elderly woman with the younger man, and that of the elderly woman with a young woman, usually bring out attitudes toward the mother figure. The picture of the woman on the bridge and the picture of the prostrate

figure, on the floor, leaning against a couch are prone to elicit attitudes toward failure with suicidal implications. Space prevents us from going into the description of all these points here. Nevertheless, in evaluating the stories, the examiner will have to keep in mind the *specific significance of each picture*, in other words, the problem posed by each picture, to which the story of the subject is a response.

The formal characteristics here discussed thus help us to find the degree of *inter-* and *intra-individual consistency*, and the points at which this breaks down. The consideration of the specific significance of each picture, and the evaluation of the content of the story given to that picture by the subject, lead us to those thought contents of the subject which play a paramount role in his life.

2. CONTENT

The formal characteristics of the stories, however, give us only a general appraisal of the person and help in locating the stories of special significance. The thought content of the subject can be inferred only from the content of the stories. While this use of the formal characteristics for general description of the subject and for locating the significant stories has been developed in the clinical work of the present author and his associates,[2] the analysis of the content of the stories has been developed by Murray himself and by the other authors referred to in the introduction to this paper. For the lack of space we shall not discuss the methods of content analysis used by the different authors and shall describe only the general outlines of our method of content analysis without pointing out to what degree our method is at variance with that of the others.

The subject builds a story around a picture. Even the present situation in the picture is, as he describes it, *his view* of the picture; the antecedent events, outcome, feelings and thoughts of the characters are "projections"[3] of his own trends of thought upon the figures in the picture. If this is realized, it will be easily seen that the strivings which the subject imparts to the figures of his story, the obstacles which he makes his figures encounter, surmount, or trip on, are all strivings and obstacles which he himself experiences in his life; and the methods which the story figures use in pursuing them and coping with them, respectively, are his own methods. It also becomes obvious that the central figures of these stories will be

[2] It is our understanding that a similar use of formal characteristics of the stories for general description of the subject is employed at the Psychology Department of Worcester State Hospital, but has not been systematically described in any publication, although some reference to such use is found in Ross Harrison's paper (7).

[3] The term "projection" is used here in the sense in which it is used in the term "projective technique," which is a generalization of the psychoanalytic concept of projection. See in this respect Rapaport (11).

figures with whom the subject identifies himself, and other personages present in the story also will be figures of his own world; however, by "world" we mean not only his actual present environment, but also the environments of his childhood and past life which are perpetuated in his memories, as well as in his present thinking and feeling. The figures occurring in the stories will stand for, or in other words will be "identified with," either the subject himself or father, mother, brother, marital mate, and child figures. The attitudes of these figures in the story toward the figure that is "identified" with the subject, as well as the attitude of this "identification-figure" toward the figures who stand for the father, mother, etc., will represent the subject's real attitudes in life toward the real figures. It is needless to say that the feelings ascribed to the identification figure are even more directly and more palpably those of the subject himself than are the thoughts and general attitudes. The principle that the more frequently a striving, an obstacle, or an identification figure occurs in the different stories, the more surely it may be assumed that it plays a more or less intense role in the world of the subject's thoughts, was described by Murray (10) and is known to many. Less frequently, however, has it been pointed out that the interpretation of these strivings, obstacles, identifications, thoughts and ideas should not be made merely on the basis of the statistical frequency of their occurrence in the stories, but rather on the basis of our psychological understanding of the belonging together of different strivings which are genetically or symbolically interrelated and/or interchangeable. For instance, in stories of a young man one finds the following motifs: "a young man is brooding over something; his eyes show intense hatred. The other man may have told him something which started this . . . could be father and son. . ." (M15). In another story: "a boy . . . struggling to get at something or get away . . . these men have overpowered him and are holding him" (M12). Again, in a third story, he is described as a boy who is told by his mother to practice while he wants to go out playing with the other boys; and the patient continues, "I think he will end up by finally practicing" (#1). In two other stories he relates that a son caused sorrow to his mother by getting in trouble, getting injured or killed (#5 and M11), and finally, "It seems to me that the old man was intending some evil against the boy—the boy may have been the son of a very highstanding man and gone out to make his claim to the titles or anything like that, and the old man has taken over the titles himself and the young man was too young to know anything about it—so the old guy thought if he could get rid of the young one he still could keep the titles" (#10).

Though not all the main strivings of these stories are identical, they can be considered as complementing each other. If they are so considered, we learn that this boy feels overpowered, forced, and prohibited in his actions by his parents, against both of whom he feels intense hatred, which

he expresses by getting into trouble and making his parents sorry. The father figure especially is the target of aggressions, and we learn of the boy's phantasy that the father deprives him of his rights. It is not the statistical frequency of a single motif, but rather the meaningful inter-relationship of several motifs, which here directs our understanding.

An interpretation of the Thematic Apperception Test should not be considered a dream interpretation; nor can it, in the majority of cases, be handled as material allowing for symbolic interpretation; nevertheless, the clinical and psychodynamic interrelations of attitudes, strivings, etc., have to be utilized in order to come to a meaningful understanding of how the world of thoughts of the subject is organized, and how the subject himself envisages his world and environment.

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COMPARISON OF CLINICAL FINDINGS AND PSYCHOLOGICAL TESTS IN THREE CASES BEARING UPON MILITARY PERSONNEL SELECTION

By Robert P. Knight, M.D., Merton Gill, M.D., Milton Lozoff, M.D., and David Rapaport, Ph.D.

It is routine procedure at this Clinic to give a battery of eight psychological tests during the clinical examination of new patients. These tests, some of which are described in detail in this and previous numbers of The Bulletin, are administered by four psychologists who are unacquainted with the history or examinational findings of the patients being tested. The test results are then examined, compared, and correlated by the chief psychologist who is also working "blind," that is, from the test results alone. His dictated summary of the correlated test results, and the diagnostic impressions derived therefrom, then become an integral part of the case abstract.

In order to obtain maximum benefit from the test results, the psychologist must compare and correlate the findings of the different tests. Such a comparative evaluation of findings is based on two main considerations: First, the kind of information anticipated from each test must be defined. Obviously a different type of information is expected from an intelligence test than is expected, for example, from either the Rorschach or the Thematic Apperception test. Second, information obtainable from one type of test may nevertheless bear upon information which is usually expected from other types of tests. Thus one ordinarily expects the intelligence test to give a general estimate of intelligence as well as some information as to its structure; but frequently an investigation of the inter-relationships of the various sub-test scores in the intelligence test gives information as to the nature of the maladjustment factors which impair certain items of the test. Or, for example, the Rorschach test, although it is used to discover the personality pattern in terms of a clinical diagnosis, may give useful information regarding the patient's thought content—a type of information usually obtained from the Thematic Apperception Test. Hence an evaluation of how the different tests support and supplement each other becomes the main theme of the type of clinical psychological work reported in this psychological issue of The Bulletin.

In our recent experience we have examined clinically and psychologically three young men, two of whom had been discharged from different branches of the armed forces for psychiatric conditions which seemed to develop some months after they entered the service, and the third of whom was

about to be inducted but before doing so was persuaded by his physician to have a psychiatric "check-up." The battery of psychological tests proved so useful in arriving at a diagnosis and understanding of psychodynamics that we felt impelled to write up the three cases and present the comparisons of clinical findings and test results.

CASE 1

The first case is that of a young man of 19 who had been in the service six months. He was discharged because, following a drinking party, he got into a violent fight with his comrades and had to be subdued forcibly in order to be put to bed. Two nights later, without further drinking, he could not be awakened to go on watch. Later he awakened, spontaneously showed peculiar behavior, without apparent cause assaulted an officer and later had amnesia for the entire experience. He was examined and given a medical discharge with a diagnosis of "Acute Alcoholic Psychosis with Acute Maniacal Behavior." After discharge, but while still in uniform, he again got into a violent fight with officers of another service and had to be restrained forcibly.

The patient was a good looking six-footer, with some air of suspicion and suppressed belligerency about him, who talked quite frankly but volunteered little spontaneous information. His social history revealed that all during his life he had been uncommunicative and unemotional except for severe outbursts of anger. He himself said that he never had been close to anyone. His school record showed poor work and considerable truancy; he got into squabbles with his principal and finally dropped out of school. He left home several times on vagrancies. He always was ready to get into fights; he described and admitted having resentful feelings toward authority and especially toward his parents. He had had a few heterosexual experiences, and had one "best girl" whom he would not approach sexually because he had "too much respect for her." Although he denied homosexual experiences, he admitted that such advances had been made to him and declared that if the overtures had been more insistent, he would have fought.

Bellevue and Babcock Intelligence Tests*

"The tests given describe a person with an I.Q. of 115, a percentile score of 85, putting him into the bright normal intelligence group. The scatter is not very marked, the performance items being better than verbal items. Concentration is rather poor. The patient's general mental efficiency is only fair, though learning efficiency is very good, immediate memory efficiency (attention and concentration) is quite poor."

* This test is described on page 93.

The scores from this test were as follows:

Wechsler-Bellevue Scale

Test	W.T.S.
Comprehension	11
Information	11
Digit span	11
Arithmetic	10
Similarities	13
Verbal	56
(Vocabulary)	(12)
Picture arrangement	12
Picture completion	9
Block design	14
Object assembly	16
Digit symbol	10
Performance	61
Total	117

Babcock Test

	Expectancy	Scores	Efficiency scores
Total	15.5	14.7	−.8
Learning	15	18.9	3.9
Motor	15.5	13.0	−2.5
Repetition	15	12.0	−3.0

(Vocabulary 16.)

Characteristic for the general distribution of the scores of the sub-tests on the Bellevue Scale is that most of them appear to cluster around 11. Such a distribution is frequently found in delinquent and "psychopathic personalities." The relationship of these to "epileptoid personality" is a moot problem.

This Bellevue Scale gives the impression that we deal with a young man whose quite ordinary general endowment is distributed fairly evenly. The Babcock Test, however, gives evidence to the contrary by showing poor efficiency scores which imply that this patient does not make good use of his endowment. Efficiency scores in the range of $-2\frac{1}{2}$, -3, usually indicate considerable maladjustment—an implication which the Bellevue scattergram in itself does not have.

*Concept Formation Tests**

"The patient's everyday concept formation is excellent, though it also has one very significant poor point. His basic concept formation is impaired by his sticking to an idea once conceived; but when, after 45 minutes, he is urged to draw conclusions from the clues, he solves the Hanfmann-Kasanin test immediately."

Eighteen of the nineteen problems in the Sorting Test were solved excellently, which is a rarity. The patient gave a striking response when, on being told to put with the lock "all that belongs with it," he grouped with it both toy and real tools, explaining: "I think all tools should be locked up." On the one hand, this is a loose grouping, mixing toys and tools and the lock; on the other hand, it is a concretistic and quite queer way of conceptualization. Such loose groupings are found in greater degree in the schizoid subjects. On the Hanfmann-Kasanin Test, the patient

* These tests are described on page 99.

started to group the blocks according to form; and though he himself discovered, and was shown by clues, the inadequacy of such groupings, whatever he started was finally disturbed or spoiled by the influence of this first idea. Though such performance occurs in subjects of several clinical types, the perseverative character of this reaction is worthy of note because it supports other findings to be discussed.

Rorschach and Szondi Tests

"These tests appear to describe an epileptoid personality. There seems to be a crust of pseudo-adaptation present, but this is a precarious covering for the wild, impulsive affectivity of the patient. In addition to this barely concealed impulsiveness, the tests indicate extreme swings of mood which make the occurrence of manic excitement possible. This patient appears to be in defense against very strong homoerotic tendencies. His narcissism is so extreme that the possibility of psychotic development cannot be excluded, although the intelligence picture and concept formation do not show real disorganization."

The Rorschach Test is extremely meager, however; of the few responses only two are form-responses; the rest are determined by colors and light-dark impressions as shown in the following formal psychogram:

Manner of approach		Determinants		Content		Percentages	
W	6	F+	1	A	1	F	22%
D	3	F±	1	Ad	2	F+	50–66%
	—	CF	2	Ats	2	A	33%
Total	9	C/F	1	X-ray	1	At	44%
		C	1	Micro	2	P	22%
		FCh	1	Flesh	1	Orig	0%
Failure	2	ChF	2				

Experience balance: 0:4.5.

In clinical psychological terms it may be said that the paucity of form responses' which usually reflect formal reasoning, indicates the limited range of effectiveness of the reasonably good intelligence seen in the Bellevue and Sorting Tests. Barely controlled impulses (CF) and anxieties (C_hF) predominate, confirming the grave view of the case, which the Babcock and Hanfmann-Kasanin force us to take, despite the superficially good performance on the Bellevue and Sorting Tests. The presence of failures, the lack of control, and the paucity of good form responses raise the question of whether or not we deal with a schizophrenic. The Rorschach test alone does not exclude this possibility, though the absence of any queerness, despite the marked lack of control present, would be quite exceptional in schizophrenia. The Bellevue findings, as well as the Sorting Test findings, likewise contraindicate schizophrenia. The impulse-ridden personality picture, considered together with one of the patient's specific responses—"flesh, because it's red,"—opens the way for another diagnostic possibility.

"Epileptoid" personalities and cases of convulsive disorder frequently give such "blurred" pure color responses and have such a general picture. This suggestion is strongly supported by the Szondi Test.* In this test the subject chooses the most liked and most disliked pictures of six series, each containing one photograph of each of eight categories of psychiatric patients (homosexuals, sadistic murderers, epileptics, hysterics, catatonics, paranoiacs, depressives and manics). This patient chose more pictures in the epileptic category than in any other. The inferences about homosexuality, mood swings, and narcissism of a well-nigh psychotic degree also were drawn from this test.

Thematic Apperception and Association Tests

"The patient's stories are comparatively meager and characterized by repetition of the same theme and phrases. One of these themes is that a mother gets bad news about her son and is desperate; another that a young boy is overpowered by an older man; a third, that a young man is in despair over what he has done in a fit of rage; a fourth, that after bringing burglars and criminals into the stories, he denies that this could be the right story. A young man is described as heir to title and wealth which an older man has kept away from him and now the elder man wants to kill him so that he cannot take it back. The younger overpowers the older. The deeds of rage are obvious patricides.

The patient's association test has little queerness. Instead, repetitive sticking to reaction words is obvious. Most of the sexual stimulus words are reacted to by the word, "human." "Cut," "bite," "hospital," "doctor," are responded to by the word "hurt." "Vagina," "intercourse," "love," and others are responded to by the word, "fun." Peculiar reactions: party—hair, social—stilted (the patient explains that everything social is stilted for him)."

The Thematic Apperception Test and the Association Test both appear to contain perseverative tendencies like those found on the Hanfmann-Kasanin Test. The last two paragraphs of the report of the tests give ample evidence of this. The Thematic Apperception material quoted shows that the latent thought content of the patient deals with feelings of being overpowered, with resulting murderous aggression against the father and against authoritative figures in general.

COMPARISON OF CLINICAL FINDINGS AND TEST RESULTS

This patient had been given the pitressin hydration test for epilepsy, with negative results. Following the psychiatric and psychological examinations he was sent for electroencephalography to another clinic, and the following report was given: "His electroencephalogram was not particularly remarkable, but throughout the record there were irregularities

* See Rapaport, The Szondi Test, *Bull. of the Menninger Clinic*, 5:33-39.

varying in frequency from small delta waves to accentuation and sharpening of the alpha waves. There were occasional very short spindles, which appeared like alpha waves but which were much larger in amplitude and whose frequency was slowed to around 7 per second. Hyperventilation produced increase in size of the alpha waves with rather sharp tops. While there is nothing in this record that shows a classical convulsive picture nor upon which I feel that I could brand a man as epileptic, yet the persistence of minor irregularities gives a very suspicious aspect to the whole record."*

The clinical impression of this patient is one of marked inhibition, emotional flatness and lack of spontaneity, but the signs of latent aggressive rebellion and suspiciousness of the motives and attitudes of others are also readily observable. Even without the history of violent outbursts of aggressivity this attitude would have been noted by an acute observer beneath the front of slowness, passivity, mild voice and even wistful appeal. The projective test results show the "wild, impulsive affectivity," the defense against strong homoerotic tendencies, the rebellious anger of the unjustly treated boy against an older man and the remorse for violence done in a fit of rage. Thus, what is latent and discernible to the psychiatrist only by noting small signs and by "intuition," appears plainly in the projective tests.

CASE 2

The second case is that of a man of 26, an engineering graduate who came voluntarily to the Clinic following his discharge from the Army after a suicidal attempt in which he took iodine, attempted to hang himself, slashed his wrists and stabbed himself repeatedly in the epigastrium.

When the patient was three months old his father died and he grew up an only child under the influence of a domineering mother. He said that when he was with his mother he "felt childish." He was given to temper tantrums and was sent to boarding schools known for their strict discipline. He picked fights and was usually beaten; his school work was poor; he avoided sports and social functions, becoming "more or less an outcast." He did not like to go home for vacations and resisted his mother's every wish, but at night he would cry with guilt "for being mean to her." He barely succeeded in getting a degree in engineering. After graduation he had difficulty in finding a job, became easily discouraged and felt that no one had any use for him. Then his mother fell ill and he became "very jumpy and depressed" and thought that every telephone call was bringing word of her death. He sometimes wished she would hurry up and die and

*Courtesy Dr. Theodore J. Case, University of Chicago.

be over her troubles. Her death left him forlorn and depressed and all alone in the world save for a distant cousin, his only living relative.

From early childhood the patient had reacted to emotional tension with diarrhea. Beginning in his sixth year he would become sexually excited in connection with leather leggings, high-heeled shoes, peg-legs, etc. Later on he masturbated with these objects as fetishes. He felt great guilt over this habit and tried unsuccessfully to abandon it. He dated and petted some but on the only occasion when he attempted intercourse he was impotent.

He joined the Army with the hope of finding interesting activities which would make him sociable and sexually normal. However, he soon found that he resented commands and became panicky when ordered to change locations. He began to realize that neither was anyone interested in him, nor did he care about anyone. He attempted suicide in a bizarre manner, enjoying the consternation of the friends who discovered him.

Psychiatric examination revealed a moderately tall, sometimes slovenly dressed, pleasant and deferential young man who was readily accessible and and who appeared to be in fair contact with reality. However, he gave evidence of a mild depression coupled with pronounced blunting of affect and marked lack of concern about himself. He seemed to enjoy discussing his sexual difficulties, about which he had read considerably in books on psychiatry, and he expressed the idea that the upper part of his body was in love with the lower part "because it's hairy." He ascribed his difficulty in establishing personal relationships with anyone to his "childish feeling" and his fear of other people's ability to influence him against his will. He had some intellectual insight but seemed incapable of utilizing it to change his behavior. In the hospital he was alternately restless and listless. He showed marked inability to concentrate and quickly lost interest in occupational therapy projects. He was indifferent to recreational activities and seemed isolated and uneasy in large groups. The total clinical picture led to the diagnosis of ambulatory schizophrenia.

Bellevue and Babcock Intelligence Tests

"The tests given describe a person with an I.Q. of 116, a percentile score of 84, putting this patient into the bright normal intelligence group. The scatter, however, is very considerable, ranging over 8 points; and while information, picture completion, and block design are quite good, planning ability and judgment are quite impaired and psychomotor speed is poor. The patient's general mental efficiency is poor, with an extremely poor learning efficiency."

Wechsler-Bellevue Scale

Test	W.T.S.
Comprehension	11
Information	15
Digit span	11
Arithmetic	13
Similarities	11
Verbal	61
(Vocabulary)	(13)
Picture arrangement	10
Picture completion	14
Block design	15
Object assembly	11
Digit symbol	7
Performance	57
Total	118

Babcock

	Expectancy	Score	Efficiency score
Total	15.8	15.1	−.7
Learning	15.4	12.5	−2.9
Motor	16.0	15.3	−.7
Repetition	15.3	17.8	+2.5

(Vocabulary 17.)

Comparison of the Information with the Comprehension score shows the impairment of judgment; comparison of the Picture Completion with the Picture Arrangement score shows the impairment of planning ability. It is the extremely low digit symbol score which makes the scatter a psychotic one. This impairment of psychomotor speed—not interpreted in the report—must be considered as probably indicating depressive trends. The malignant character of the scatter also is attested to by the extremely impaired learning efficiency in the Babcock.

Rorschach and Szondi Tests

"The diagnostic personality tests given describe a schizophrenic psychosis which, despite evidence of ideas of reference and some bodily preoccupations (sexual and anal preoccupations also), is characterized mainly by a blandness of affect and appears to be of long standing with an insidious onset. Some depressive coloring appears to be present. Masturbatory guilt and corresponding feelings of decay are indicated."

The formal psychogram of the Rorschach Test follows:

Manner of approach		Determinants		Content		Percentages	
W	5(2)	F+	3	A	4	F	70%
D	10	F−	4	Ad	1	F+	50%
Dr	2	F±	3	Obj	1	A	30%
	—	F∓	2	At	8	Obj	6%
Total	17(2)	FC	2	Anal	1	P	12%
Failure		C/F	1	Sex	1	At	47%
S	2	C	1	Twins	1		
P	2	ChF	1		—		
Comb	1		—	Total	17		
Confab	2	Total	17				
Contam	1						
Position	1						

Experience balance: 0:3.5.

The schizophrenia is indicated by the extremely low percentage of good forms, by the extremely high percentage of anatomical responses, by the presence of one position response, by two confabulations and one contamination. The report emphasizes the most striking feature of the record—the bland affect—indicated by the "blurred" and arbitrary use of colors in the color responses. The chronic aspect and insidious onset are inferred from the contrast between the high degree of disorganization and bland affect and the retention of some semi-adaptive responses. This also is supported by the fact that the scatter on the Bellevue Scale is relatively less than would be expected from the disorganization seen in the Rorschach. The masturbatory guilt is indicated by responses such as: "as if this would be a hollow rack up here; looks as though it is eaten, torn away on the bottom here." The presence of ideas of reference is inferred from the maximal choice of paranoid pictures in the Szondi Test, while depression is indicated by minimal choice of the depressive pictures.

Concept Formation Tests

"The patient's everyday concept formation reveals the usual schizophrenic widening of the concept basis. The basic concept formation is characterized by a tendency to lose awareness of the task. Indecision and disorganization are seen in the inability to apply ideas consistently to all the blocks."

The statement concerning "everyday" concept formation refers to the Sorting Test. A sample of the widening of the concept basis is this: when the patient is asked to put with a pipe "all that belongs with it," he puts with it, besides the smoking utensils, a large table knife, stating: "all smoking implements; the knife used to cut off end of cigar." The rest of the paragraph refers to the Hanfmann-Kasanin Test, in the course of which the patient states: "I seem to have forgotten what you wanted me to do in this." Furthermore, when he starts to divide the blocks by height, he begins to disregard the height before he is halfway through, as if forgetting what he set out to do. Nevertheless, confirming the fairly good "front" which this patient is able to maintain, he arrives at the solution of the test in 45 minutes.

Thematic Apperception Test

"The patient's stories are evasive and flat. Major peculiarities which they show are the following: people are frightened by a monster and run, but the monster is described as just "looking at them with a whimsical sort of look; he is just curious."* People are described as searching for ghosts and being obsessed by an idea which disturbs their minds and threatens them with terrible things. Aggressions are consistently avoided and denied."

* In the Thematic Apperception Test, the monster who is described as "just curious" might well be the patient's description of himself and his bland affect. The terrible idea with which people are obsessed may refer to the masturbatory guilt so prominently seen in the Rorschach.

Association Test

"The Association Test has a few unexplained long reaction times; for example: party—"I don't know, I can think out any number of things." Peculiar associations are: breast—works, dark—hour, bite—break, son—gun. "Boy friend" and "girl friend" bring responses of proper names. Long reaction times characterize the following: orgasm—ejaculation; masturbate—jerk; intercourse—"well, you fit any number of things there;" hospital—corps."

The unexplained long reaction times in the Association Test, especially in view of the findings already reported, may be a depressive indication. The specific response "dark—hour" can mean the same. Clang associations, such as "son—gun," usually are found only in psychoses. The long reaction times to words referring to sex and masturbation could have been anticipated from the previous tests.

COMPARISON OF CLINICAL FINDINGS AND TEST RESULTS

Comparing the psychological test findings with the psychiatric observations, one finds an extremely close correlation in virtually all respects. The clinical features of the insidious onset and the chronic aspect, the apparent retention of superficial contacts with reality despite the obvious impairment of the patient's judgment, the inability to concentrate or to maintain any persistent interest, the blunted affect with its undercurrent of mild depression, and the preoccupation with masturbatory guilt and sexual and anal matters are all clearly depicted in the tests. Though the ideas of reference reported in the tests were not found clinically, there were present the closely akin ideas of influence.

The value of a battery of tests and the correlation of the tests with one another is revealed by the following summary: evidences of depression were found in Bellevue, Rorschach, Szondi, and Association Tests; schizophrenia was concluded from the Rorschach and Concept Formation Tests, while the Bellevue and Association Tests yielded corroborative evidence; indications of a good "front" were found in the Bellevue, Hanfmann-Kasanin and Rorschach Tests; important ideational content of the psychosis was found in the Rorschach, Association, and Thematic Apperception Tests.

CASE 3

The third case is that of a young man of 20, who came to us with the complaint that ever since he could remember he had suffered from "blue spells" of varying lengths which recently had become more frequent and disturbing. He was planning to join the Army, hoping that the "excitement and hard work" would solve his problem.

Because the father temporarily abandoned the family, the boy had been

reared from his sixth month to his sixth year in a foster home. His only sibling, a younger sister, had been placed with grandparents. He remembers this period as a happy time. From his sixth year on he lived in the re-established parental home and says that from the very beginning he felt hostile to his father. He feels that his parents ill-treated him and favored his sister. He respects his hard-working mother but states that she will give him "everything but affection." He never did well in his studies although he completed high school. He had spent much time in scouting activity and was an assistant scoutmaster. His only friends were the boys in the troop. In fact, the blue period which precipitated his seeking help began when a 13-year-old friend failed him in an appointment to go to a movie. The patient described the movie as a "sentimental one in which a man took care of a little boy," and said, "I put myself right in the picture."

He had had no heterosexual experiences and the only girl he had liked was a boy friend's girl, with whom he went after his friend broke up with her, but in whom he soon lost interest. He denied homosexual experiences; he masturbated about once a week without guilt feelings.

Bellevue and Babcock Tests

"The tests given describe a person with an I.Q. of 118 and a percentile score of 90, putting this patient on the borderline of the bright normal and superior intelligence groups. The scatter is marked. Specifically, a great impairment of attention appears to be present and the psychomotor retardation, in view of the fact that this is the only low performance item, may indicate a mild depressive trend. The patient's general mental efficiency is somewhat impoverished; however, learning efficiency is well preserved on an excellent level."

The above paragraph is based on the following material:

Wechsler-Bellevue Scale

Test	W.T.S.
Comprehension	14
Information	14
Digit span	7
Arithmetic	12
Similarities	11
Verbal	58
(Vocabulary)	(12.5)
Picture arrangement	16
Picture completion	12
Block design	15
Object assembly	13
Digit symbol	9
Performance	65
Total	123

Babcock

	Expectancy	Score	Efficiency score
Total	15	13.8	−1.2
Learning	14.5	16.4	+1.9
Motor	15	13.5	−1.5
Repetition	13.7	11.2	−2.5

(Vocabulary 15.)

The inference concerning attention disturbance is derived from the very low digit span score; that concerning the psychomotor retardation and consequent depressive trend from the low digit symbol score. The rest of the test items, and especially the good comprehension, information, and picture arrangement scores, indicate that the patient still is able to put up a relatively good front. The Babcock Test findings show considerable impairment of the patient's efficiency in using his natural endowment and support well the specific Bellevue findings, inasmuch as the repetition items correspond to the digit span in the Bellevue, while the motor items correspond to the digit symbol.

Rorschach and Szondi Tests

"Performance on the diagnostic personality tests is quite unusual. The first administration of the Rorschach test yielded only vague and indefinite anatomical responses. Such a protocol is indicative of blocking and, if nothing further is obtained, should be considered that of a probable schizophrenia. However, when the nature of this test was explained to the patient, he was able to go over it again and give a protocol characterized by psychasthenic and obsessive features. Some mild depressive indications seem to be present. The absolute lack of color responses is indicative of a weakness of affective responsivity and precariousness of object relationships. On the basis of these findings, it may be formulated that the patient is a schizoid personality in whom a psychotic development may be expected, inasmuch as features of blocking are already present. Nevertheless, the present state seems to be one characterized by psychasthenic, obsessive, and some slightly depressive features. The tests appear to indicate that the patient's passive oral needs have been forcibly suppressed. A schizophrenic development would probably bear paranoid features."

The Rorschach test findings are discussed in considerable detail in the report. The formal psychogram follows:

Manner of approach		Determinants		Content		Percentages	
W	11	F+	11	A	6	F	84%
D	10	F−	7	Ad	1	F+	60-66%
Do	2	F±	1	H	3	A	29%
Dr	1	F∓	1	Hd	2	Obj	13%
	—	M	2	Obj	3	P	25%
Total	24	Ms	1	At	6	At	25%
		FC′	1	Pl	1	H	20%
Failure			—	Arch	1		
S	1	Total	24	Geol	1		
P	6				—		
Orig	1				24		

Experience balance: 3:0.

This psychogram combines the two administrations of the Rorschach Test. The inferences concerning the "suppressed, passive, oral needs" and the "probable

paranoid features" of a future schizophrenic development are derived from the Szondi Test. The patient did not choose any of the paranoid pictures either as liked or disliked. He chose five out of six pictures of homosexuals—more than from any other category.

Association Test

"These diagnostic findings are supported in the Association Test by the following unusual responses: bowel movement—shit; boy friend—Jim; homosexual—screw; orgasm—phlegm; laugh—ha, ha; mother—mother; vagina—virgin; son—mine; intercourse—fuck. Besides these unusual responses, the patient states that he has great difficulty in responding because the stimulus word always evokes a picture of the object rather than an associated word. Furthermore, a great number of failures in recall and a great many prolongations of reaction time are present both in the Association and Recall experiments."

The findings of the Association Test strongly support a pre-schizophrenic diagnosis. Particularly indicative in this respect is the mode of reacting with a picture of the object denoted by the stimulus word instead of with an associated word. Normal subjects and neurotic patients may or may not have visual images in response to the stimulus words. In any case, they do not give their visual images as responses but, as instructed, respond with another word. It also is quite unusual to find the common sexual words as associative responses, especially in such an affectively inhibited person. The response: "laugh—ha, ha," is quite queer; while the response: "son—mine," correlates specifically to his wish to have a son. The generally prolonged reaction time is another depressive indication.

Concept Formation Tests

"Although the patient's everyday concept formation shows a number of peculiarities, outstanding among which is a general tendency to narrow the concept basis, the basic concept formation remains excellent. He solved the Hanfmann-Kasanin Test is 14 minutes without any devious attempts. The only remarkable feature of his performance was the deliberate slowness with which he went at it."

The patient's Sorting Test is generally narrowed, as seen in depressives. However, there is one loose grouping: with a red paper disk he puts a piece of paper, a matchbox, and a wooden block with a nail in it, explaining that "those are paper and paper is made of wood." This type of loosening frequently is seen in pre-schizophrenic subjects. In contrast to this, the basic concept formation as shown in the Hanfmann-Kasanin Test is excellent and indicates the assets of this patient. That it remains unencroached upon by the schizoid maladjustment is indicative of a relatively good prognosis.

Thematic Apperception Test

"The patient's fantasies are quite rich and coherent in that he describes himself as a person who must do his job in order not to lose faith, and who

gets "a bad case of the blues" if he fails. There is a trend toward making the stories impersonal. Intense hatred toward the parents, especially toward the father, appears to be indicated. From the stories it may be inferred that although he craves kindness, he cannot allow himself to accept it. Passive wishes are punished in these stories. Indications of an overevaluation of the female, of rejection of heterosexuality as being merely a matter of propagation, as well as a danger to the woman, and also indications of homoerotic trends, appear to be present."

COMPARISON BETWEEN THE CLINICAL FINDINGS AND THE PSYCHOLOGICAL TESTS

The psychological tests correlate well among themselves and with the clinical impression. Indications of depression in Bellevue, Babcock, Rorschach, Sorting, and Association Tests coincide with the presenting complaint—"blue spells." Despite his illness the patient was carrying on with a job and with his Scout work, and we see that both the Bellevue and the Hanfmann-Kasanin Tests indicate his ability to put up a "good front." It was of course the patient's good endowment which enabled him to get through school despite severe maladjustment, but his poor grades could be expected from the general impairment of mental efficiency. He complained of difficulty in keeping his attention fixed on routine tasks in his work (evidently the result of attention disturbance, as seen in Bellevue and Babcock Tests). The preoccupation with his problems and his general listlessness and tiredness harmonize with the Rorschach description of "obsessive and psychasthenic features."

The indications of a pre-schizophrenia on Rorschach, Sorting, and Association Tests come as something of a surprise, but as a matter of fact it was the very conclusion reached clinically because of the following evidence: the patient's hostility against parents and sisters was expressed without disguise. The bitterness and hatred with which he spoke of childhood episodes in which he felt his sister had been favored were as fresh as though the events had occurred only yesterday. Except for the Scouting activity he had practically withdrawn from social contacts. His loosened grip on reality was exemplified by the fact that on close questioning it appeared that he was not sure that his parents were his "real" parents. The Rorschach indication of precarious object relationships was of course borne out by the patient's story. His rejection of strong passive needs as seen in the Szondi and Thematic Apperception Tests also was found clinically, while the fact that passive wishes had broken through to consciousness is another pre-schizophrenic indication. It is possible that the patient's brief affair with the ex-girl-friend of his best boy friend is a confirmation of the homosexuality adduced from the Szondi Test. His interest in young boys is further evidence. Paranoid elements are seen especially clearly with

reference to his hatred of his father. In addition to this excellent congruence between clinical examination and psychological tests, it must be pointed out that a superficial clinical examination might have overlooked the pre-schizophrenia which is so important to a true understanding of the case, while in the psychological tests it was immediately apparent.

CONCLUSIONS

The clinical findings and psychological test results of three cases are presented in some detail for the purpose of demonstrating the correlations among the tests themselves and between the test results and the clinical examination. Close correlation is observed in each case.

The experienced, intuitive psychiatrist can, in most cases, arrive at a sound diagnostic appraisal of a patient after thorough history taking and psychiatric examination. However, his subjective appraisal can be supplemented, supported, and confirmed through the use of a battery of standardized psychological tests such as have been described. It is obvious that tests of this kind provide an invaluable check on the appraisal of a patient given by less experienced psychiatrists and by young psychiatrists in training.

The three cases selected for presentation all have some bearing on the question of psychiatric selection of men for the armed forces. The first two developed acute mental disturbances while in the service, and the third is quite evidently a candidate for some kind of breakdown. All three should have been rejected at the induction examination. However, although a 15-minute psychiatric interview would not be likely to uncover the critical psychopathology on the basis of which rejection could be made, even so short an interview by an alert psychiatrist would have aroused sufficient doubt so that each case could have had a more thorough examination. If it were possible to administer the battery of psychological tests to such specially selected cases, most of them would reveal their psychopathology definitely through the test results. The authors believe that the clinical histories of the first two indicate clearly that the predisposition to breakdown was clinically evident before they entered the service, and hence that the mental illnesses which developed were not caused by military training.